

Model Validation

Concepts and Reports

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Model Validation Research

- Stricker, M., Wang, S. and S. Strommen. 2014. Model Validation for Insurance Enterprise Risk and Capital Models. Sponsored by CAS, CIA, SOA Joint Risk Management Section

Model Validation

Purpose

Assess and communicate the level of model risk in light of the intended application

Order of Validation

- **Conceptual Risk**
- Implementation Risk
- Input Risk
- Output Risk
- **Reporting Risk**

Conceptual Validation

- Purpose of the model needs to be well established
 - What decisions it intends to support & who uses the results
- Modeled risks are clearly defined and documented
 - Process in place to review selected and excluded risks
- Modeling method is appropriate for the selected risks
- Modeling limitations are identified and communicated
 - Important to have these communicated with all stakeholders

Conceptual Validation in Practice

- Very important for risk modeling
 - Usually testing extreme events with little historical experience
- Relevant to Economic Capital models
 - Intended purpose – Total Asset Requirement, Risk Assessment, Capital Allocation
 - Which risks can be reasonably modeled?
 - Modeled individually or all together?
- Clear communication of limitations
 - Provides better context for interpreting results

Reporting Validation

- Confirm frequency and timing of reports align with decision they support
- Validate that output for users is complete and not misleading
- Important to have communication and feedback between end users and model development teams

Reporting Validation in Practice

- Strive to make risk reports tangible to end user
 - Present Value vs Accumulated Value
 - Exposure relative to block size
 - Results relative to past experience
- Roll-forward reports
 - Helps interpret results and provides credibility